7 ANESTHESIA

Do not give any anesthesia until you know what the problem is.

Use a new sterile needle.

For lower teeth on adults, use a 27 gauge long needle.

For upper teeth and children, use a 30 gauge short needle.

Do not reuse any partially used anesthetic that was given to other patients.

Load syringe like so:

photo of syringe load sequence

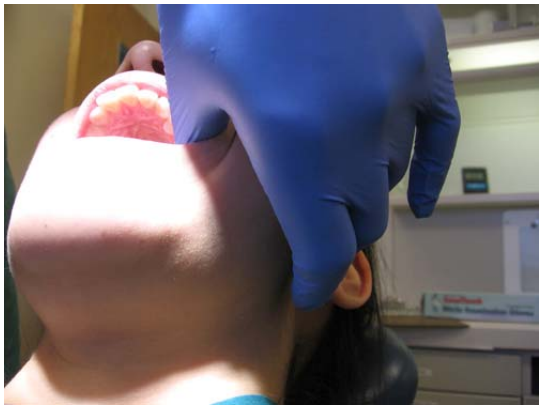
1. Pull plunger back.
2. Load anesthetic, ensuring that the needle inserts into the rubber diaphragm.
3. Engage plunger by firmly hitting handle of syringe.

Make sure anesthetic flows properly before injecting.

<u>Lower</u>

Seat or slightly recline the patient with their head in a neutral comfortable position.

Place your thumb on the inner curve of the jaw bone (coronoid notch).



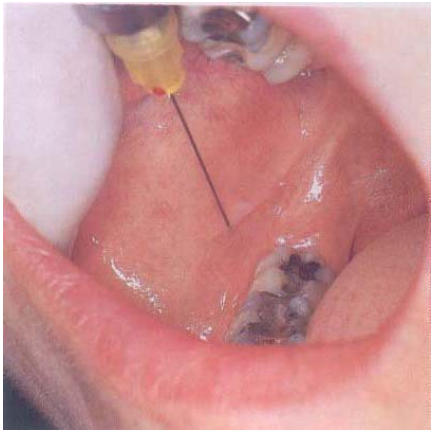
Place your fingers on the outer edge of the ramus or angle.

Align the needle above the plane of the teeth with the shaft of the syringe over the canine and first premolar of the opposite side (left photo below). The needle tip should be about 1cm further in the mouth from the coronoid notch in the crease between the cheek and jaw (right photo below).

photo of syringe alignment

needle tip placement

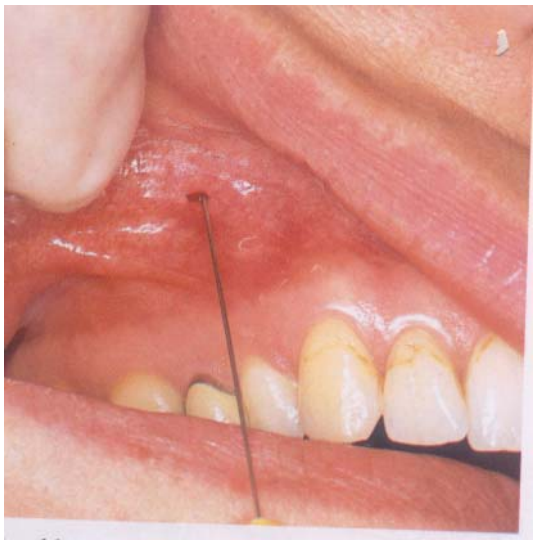
- Slowly advance the needle. Gently hit bone. This should be about 1.5-2 cm for most adults or 1 cm for children.
- *Aspirate* (pull back plunger slightly). If blood comes into the carpule, pull the syringe out slightly and realign it. Repeat *aspiration.* If no blood comes back into anesthetic slowly inject (~30-60sec/carpule).
- Anesthetic takes about 3-5 minutes to begin working. If lower lip feels tingly, you injected in the correct place. Wait until the lip feels big and fat before proceeding. If the patient's lip does not feel tingly, give more anesthetic. Usually inadequate numbness is caused by not giving the anesthetic in the proper place.
- The patient may need more than one dose. The table at the end of this chapter shows the maximum doses for adults and children.



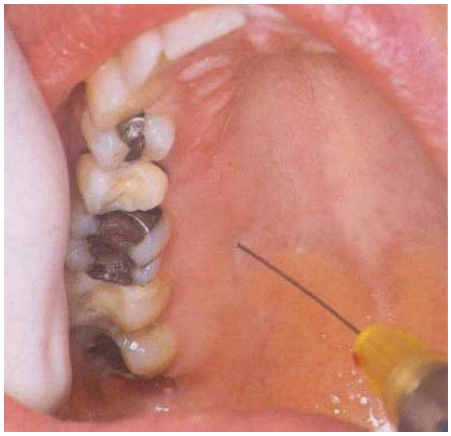
If you will be taking out a lower molar or premolar, you will also need to anesthetize the gums with a separate injection. Insert the needle in the soft fold of gums just behind and below the second molar as in the photo to the left. About $1/6^{th}$ of a carpule is usually sufficient to make the gums numb.

Upper

Seat or lay the patient back with their head tilted back.

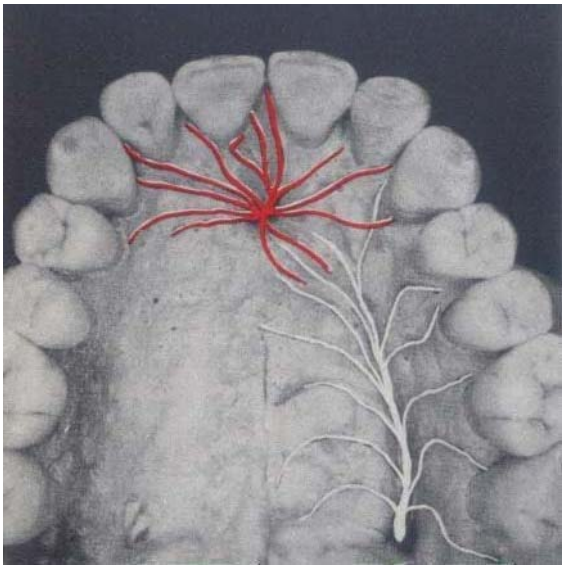


Pull back upper lip with index finger or thumb. Insert needle in loose part of gum (mucosa), aiming for the root tip of the tooth you wish to get numb. Aspirate. If no blood in anesthetic, you may inject. About ⅓ to ½ carpule is usually adequate, but more can be given if necessary.



If you are extracting teeth, you should also anesthetize the gums on the lingual (palatal) side of the teeth. There are two sites where you can inject to make the gums numb. For posterior teeth (premolars and molars), inject as in the photo to the left. With your finger, feel for a

soft, spongy area between the first and second molar, and where the palate bends sharply (palate and alveolus). The nerve that comes out in this area supplies feeling to the gums from the molars to the premolars.



For incisors and canines, inject into the raised bump just behind the incisors. The photo to the left shows where the different nerves supply feeling.

Table of Maximum Anesthetic Doses

Anesthetic (dose mg anesthetic /Kg patient weight)	Child	Adult (healthy)	Adult* (unhealthy)
4% Articaine 1:100K epinephrine (7mg/kg)	2 carpules (1/2 usually sufficient)	7 carpules (1-2 usually sufficient)	2 carpules
0.5% Bupivicaine 1:50K epinephrine (1.3mg/kg)	2 carpules (1 usually sufficient)	10 carpules (1-2 usually sufficient)	2 carpules
2% lidocaine 1:100K epinephrine (7mg/kg)	2 caprules (1/2 -1 usually sufficient)	14 carpules (1-2 usually sufficient)	3 carpules
2% Mepivicaine 1:20K levonordefrin (6.6mg/kg)	2 carpules (1/2-1 usually sufficient)	7 carpules (1-2 usually sufficient)	2 carpules

* These are typically patients who are elderly or frail, or with a history of heart, kidney or Liver problems.